

REMARKS/ARGUMENTS

Favorable reconsideration of this application as currently amended and in light of the following discussion is respectfully requested.

Claims 1-24 are pending in the present application with Claims 2, 4, 6, 8, 10, 12, 14, and 16-24 withdrawn from consideration. Claim 1 is amended by the present response.

In the Office Action of July 27, 2005, Claims 1, 3, 5, 7, 9, 11, 13, and 15 were rejected under 35 U.S.C. § 102(e) as anticipated by Imai et al. (Japanese Patent Application JP 2002-289810, herein Imai). The Advisory Action of November 10, 2005 maintains the rejection of the Office Action of July 27, 2005.

Regarding the rejection of Claims 1, 3, 5, 7, 9, 11, 13, and 15 under 35 U.S.C. § 102(e) as anticipated by Imai, independent Claim 1 has been amended to recite an adhesive layer that includes a flat metal carbide film, a silicon carbide film and an electrode. The claim amendments find support in Figure 1G and in the specification, for example at page 12, lines 16-25, and page 10, lines 12-26. No new matter has been added.

Briefly recapitulating, amended Claim 1 is directed to a semiconductor device that includes, *inter alia*, a flat electrically conductive silicon carbide film, a flat electrode, and an adhesive layer provided between the silicon carbide film and the flat electrode. The adhesive layer includes a flat metal carbide film configured to adhere the silicon carbide film to the electrode.

In a non-limiting example, Figure 1G shows the flat electrically conductive silicon carbide film 21, the flat electrode 23, and the adhesive layer including the flat metal carbide film 26.

Turning to the applied art, Imai discloses two equations: (1) $\text{SiC} + \text{M} \rightarrow \text{LSi} + \text{C}$ and (2) $\text{SiC} + \text{M} \rightarrow \text{MC} + \text{Si}$ based on which a silicon carbide film interaction with a metal under

specific temperature conditions can transform into a metal carbide film. The outstanding Office Action relies on the second reaction of Imai for asserting that a platinum layer 118, shown in Figure 1 of Imai, produced above a silicon carbon layer 117 and exposed to a temperature higher than 700°C would partially transform into a platinum carbide layer.

However, Applicants respectfully submit that Imai does not teach or suggest an adhesive layer for enhancing the adhesion properties between a silicon carbide film and an electrode. Thus, it is respectfully submitted that one of ordinary skill in the art would not use a flat metal carbide as an adhesive layer and therefore, the second equation of Imai would not lead to the formation of an adhesive layer as required by Claim 1.

In addition, in order to obtain the lamination of silicon carbide film/adhesive layer (flat metal carbide film)/flat electrode of Claim 1, a metal film is formed on a silicon carbide film and the reaction is determined between the silicon carbide film and the metal film. In Imai, however, if a silicon carbide film is formed on the metal film and a reaction is caused between these two films, the lamination of the metal carbide film/silicon carbide film/flat electrode might be obtained but this lamination is different from that of Claim 1.

In other words, the second equation of Imai merely shows that the metal carbide is formed by a reaction between a silicon carbide and a metal and does not show the process for obtaining the claimed lamination of silicon carbide film/adhesive layer (flat metal carbide film)/flat electrode. Therefore, Applicants respectfully submit that one of ordinary skill in the art, aware of the second equation of Imai would not form an adhesive layer as requested by amended Claim 1.

In addition, paragraph [0081] of Imai states that “[i]t is confirmed that titanium silicide is also stable” and “[a] metal is reacted with silicon carbide if a metal is independently used; however, a metal is stabilized by using it in the form of a metal silicide

or carbide.”¹ Thus the stability of titanium silicide in Imai is regarded as important and a reaction of titanium with silicon or carbon is regarded as undesirable. Further, Imai indicates that if titanium is independently used, the reaction of the first equation will occur (that is, the titanium is silicified). However, Imai does not indicate whether or not the reaction of the second equation will occur. Thus, Applicants respectfully submit that one of ordinary skill in the art would not use the process described by the second equation in Imai for obtaining the lamination of Claim 1 of silicon carbide film/adhesive layer (flat metal carbide film)/flat electrode.

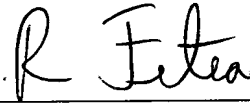
Therefore, Applicants respectfully submit that one of ordinary skill in the art, even using the second equation of Imai, would not be motivated to create an adhesive layer (flat metal carbide film) as required by Claim 1. Thus, Applicants respectfully submit that amended Claim 1 and each of the claims depending therefrom patentably distinguish over Imai.

¹ Paragraphs [0079]-[0081] of Imai.

Accordingly, in light of the above discussion and in view of the present amendment,
the present application is believed to be in condition for allowance and an early and favorable
action to that effect is respectfully requested.

Respectfully submitted,

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